

Claims

1. Flat panel loudspeaker arrangement comprising:

a plurality of identical panel loudspeakers positioned side-by-side and abutting seamlessly, wherein respective adjacent panel loudspeakers are rigidly connected with one another along respective edges so as to provide a high shear strength.

2. The flat panel loudspeaker arrangement of claim 1, wherein the individual panel loudspeakers include at least one driver that produces oscillations, a sound panel and a support, with the panel loudspeakers operating according to the multi-resonance bending wave principle.

3. The flat panel loudspeaker arrangement of claim 2, wherein the sound panel is a self-supporting panel with low damping and implemented as a sandwich structure with a light, shear-resistant core and at least one cover layer which is completely connected to the core.

4. The flat panel loudspeaker arrangement of claim 2, wherein one side of the at least one driver is connected to a backside of the sound panel, with another side of the driver facing away from the one side being adapted for attachment of the panel loudspeakers on a suitable surface.

5. The flat panel loudspeaker arrangement of claim 2, wherein a backside of the sound panel includes a spacer profile which is capable of holding the sound panel without additional support.

6. The flat panel loudspeaker arrangement of claim 5, wherein a side of the spacer profile facing away from the sound panel can be attached to a suitable surface.

7. The flat panel loudspeaker arrangement of claim 5, wherein the spacer profile comprises a plurality of spacer elements.

8. The flat panel loudspeaker arrangement of claim 5, wherein the spacer profile includes a pad made of a soft material that is affixed to the entire back surface of the sound panel.
9. The flat panel loudspeaker arrangement of claim 8, wherein the pad includes openings for the at least one driver.
10. The flat panel loudspeaker arrangement of claim 6, wherein the spacer profile includes a circumferential, hermetically sealing bead that contacts the mounting surface so as to provide an isolated resonance volume.
11. The flat panel loudspeaker arrangement of claim 10, wherein the resonance volume includes a vent opening.
12. The flat panel loudspeaker arrangement of claim 11, wherein the vent opening includes a bass reflex tube.
13. The flat panel loudspeaker arrangement of claim 12, wherein the bass reflex tube is disposed in the sound panel as a floating tube.
14. The flat panel loudspeaker arrangement of claim 12, wherein the bass reflex tube includes a rear mounting flange facing the mounting surface, with one or more openings disposed in the bass reflex tube and providing a connection to the resonance volume.
15. The flat panel loudspeaker arrangement of claim 14, wherein the sound panel further includes an air gap that is hermetically sealed and decouples the bass reflex tube from the sound panel so as not to impede the bending oscillation of the sound panel.
16. The flat panel loudspeaker arrangement of claim 1, wherein the panel loudspeakers are electrically connected in form of a bridge network.